

Applied Polymer Systems, Inc.

519 Industrial Drive, Woodstock, GA 30189

678-494-5998

www.siltstop.com

Salmon Trout River

Innovations

Erosion Control & Sediment Containment

Department of Environmental Quality (MDEQ) in Lansing, Michigan contacted the Marquette County Road Commission to get ahold of Applied Polymer Systems, Inc. to consult and design an erosion and sedimentation plan during construction of a bridge on the Triple A Road. The bridge crosses over a stream which drains to the Salmon Trout River located in Michigan's Upper Peninsula. A citizen had filed an official complaint to the MDEQ regarding the destruction and sedimentation of the surrounding streams and wetlands the construction was causing. There is a huge concern for habitat loss and destruction of rivers and streams reporting to Lake Superior.

The Triple A Road and Salmon Trout River are located on the Yellow Dog Plains, a remote 50 mile stretch that has camps with no electrical lines. The Triple A Road is used by loggers, hunters, foragers and for recreational purposes. The road was being upgraded and rerouted for haul trucks and mine traffic to and from the Eagle Mine. The Yellow Dog Plains is pristine with healthy, natural ecosystems. The Salmon Trout River has a breeding population of coaster brook trout. Coasters are the largest surviving form of brook trout and are virtually extinct from their native range on the south coast of Lake Superior except for the Salmon Trout River. The Salmon Trout River is the last remaining run of native coaster brook trout along the entire south shore of Lake Superior where they live and spawn.

Upon first site visit, best management practices on the construction site consisted of rocks and hay bales. To protect the stream, Applied Polymer Systems' polymer enhanced soft armoring and sedimentation retention barriers (SRBs) were implemented.



This is the beginning of bridge construction over a stream draining to the Salmon Trout River.



Sediment retention barriers (SRBs) were installed at the bottom of the slopes adjacent to the stream.

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The sides of all slopes draining to the stream were polymer enhanced soft armored using APS 712 Silt Stop Powder.



Polymer enhanced soft armoring and Sediment Retention Barriers were installed at the bottom of the slopes adjacent to the stream.

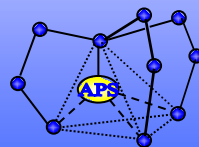


Construction of bridge finished with sediment contained on site and the stream was not impacted.

The sides of all slopes draining to the stream were polymer enhanced soft armored using APS 712 Silt Stop Powder. Applied Polymer Systems' polymer enhanced soft armoring is the process by which soft pliable open-weave matting such as jute, coir, coconut, hemp or burlap is placed onto the soil surface. (Straw and mulch can also be used) The APS soil-specific Silt Stop Powder is then applied on top of the open weave matting so it will fall through the openings and come in contact with the soil. The objective is to bind soil particles together so they become resistant to wind and water erosion and to promote vegetation following soil disturbing activities. If hydroseeding, the polymer can be added to the seed mix and then sprayed onto the bare ground. Research testing by Auburn University found efficiency of polymer enhanced soft armoring can be 100% effective preventing soil loss and sedimentation.

Sediment Retention Barriers were installed at the bottom of the slopes adjacent to the streams for perimeter control and additional sediment control. The Sediment Retention Barrier (SRB) is a double row of Georgia Type C silt fence (passing water at 70 gpm/sq ft), standing about 4 – 6 feet apart, filled with loose mulch, straw, woodchips, or other organic matter mixed or blended with APS 712 Silt Stop Powder. It is used on graded sites to trap the fine sediments and clays that flow through the conventional silt fence barrier that usually escape from the graded site. With the use of the site-specific Silt Stop Powder, stormwater clarity can be greatly improved while utilizing the function of the silt fence.

Sediment was contained on site and the stream was not impacted during construction of the bridge.



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info@siltstop.com